

27 December 1965

Subject: Coordination of Life Sciences R.D.T.&E. Activities
Between

To: Chiefs,
Action copies: Responsible Staff Personnel.

A. General Considerations

1. The [] does not have a Life Sciences Research, Development, Test and Evaluation Program in the traditional and strict sense of the word since its [] objectives do not specify, per se, discrete Life Sciences requirements. Instead, the major projects initiated in [] are directed toward the achievement of an advanced [] capability within a rather critical and narrow future time frame. In those projects which contain a human operator responsible for a vital on-line function in the System control loop, then adequate considerations must be given to, and provisions made for, his viability performance and survival. Supporting Life Sciences activities therefore become primarily directed efforts toward a specific systems requirement or problem, using wherever possible, existing knowledge and available technology for successful application thereto.

2. In order to meet this heavy responsibility for achieving a National [] advantage within a specific time period, must of necessity concentrate its limited personnel (and funds) upon [] Personnel available for so-called full time, overall R & D activities are severely limited and there is no individual available to plan, direct and manage a Life Sciences R & D program. To overcome this deficiency [] has made full and excellent use of its Industrial, Academic and Government collaborator co-workers and consultants, depending heavily upon a few highly competent, key individuals to make single point and final decisions. In the light of past significant and major contributions to the Nation's stake at the international bargaining tables, it would appear that [] organization and modus operandi has much to commend it, however unconventional it may appear to the purists.

B. Past and Current Life Sciences Coordination Activities.

1. As pointed out above, the basic working premise underlying efforts is to add a proven and advanced capability to the National Inventory, using only existing knowledge and technology uniquely integrated into a new systems concept. For this reason, formal documentation of its plans and implementation activities do not exist in traditional format used by R & D agencies. The orientation is pointed entirely (and properly) toward the realization and utilization with the supporting evidence being found in the documented results of the readiness activities and inspections. Thus, only the end results and products of Life Sciences R.D.T.&E. efforts are found in the official documents and even these are not always identified as such. Of fundamental and primary importance is that the advanced system is brought on-line within the time required and the details of how each subsystem (including the human operator) met its individual requirements is somewhat academic, albeit of some potential historical value.

2. The lack of formalized Life Sciences R & D documentation within activities has not as yet posed any particular hardship on the end results. In addition to the access to governmental Life Sciences R & D laboratories and personnel, enjoys a benevolent partnership with an Academic and Industrial complex representing all fronts of science and technology. Competition in the Life Sciences field being what it is today - with both DOD and NASA holding ample largesse for the winners - practically guarantees an expert and current industrial cognizance of significant progress and advances in the overall field. Therefore many new approaches are successfully followed to realization with little evidence in the record of the ideation and ingenuity involved. It is perhaps this one factor of industrial cognizance of existing Life Sciences research and development activities which has been most important in attaining the required Life Sciences objectives.

3. Since the re-organization of [] with managing the Life Sciences portion of the total R & D program, we [] have been holding periodic informal coordinating conferences with him and his staff. These particular exercises have proven extremely valuable to our [] Life Sciences efforts and end objectives. On several occasions [] has expanded the scope of existing R & D projects under his cognizance to more directly focus on a current unresolved [] problem. On other occasions he has initiated and funded R & D projects at our specific request in order to fill in noticeable gaps in our own program.

C. Future Plans

1. The past history of [] projects and resultant amply attests the fact that practically no advanced system capability ever becomes obsolete or dead-ended. Constant improvements are made from newly discovered knowledge and technology to further augment the [] envelope of the total system and these must be equally paced by improvements in the performance and survivability of the human component. In addition to these extrapolated systems improvements, there are numerous completely new [] concepts which are being evaluated by the [] R & D staff. In some of these latter cases, the decision to proceed into a feasibility and preliminary design study might partially rest upon our ability to give reasonable assurance regarding the integrity of the human component. Therefore, if we in the Life Sciences are to give timely and valid answers to problem areas presented in both the above cases, it is obviously mandatory that we maintain a constant vigilance for significant advances and potential breakthroughs in our own field.

2. These aforementioned objectives can be better met by expanding the cognizance of [] on these significant advances through a more formalized and scheduled use of [] Life Sciences staff in [] In order to properly utilize these additional scientific and technological overseers, it is necessary to provide them with information of greater depth and detail on [] Life Sciences requirements and programs than can be communicated during an informal oral discussion. Therefore,

through mutual agreement between the Chief, along with and staff, the following plan of action will be implemented in 1966:

a. Initial written documentation on current Life Sciences activities will be presented to and staff on 28 December 1965. At this meeting, those projects which require further assistance from Life Sciences will be noted for more detailed discussion and/or consideration.

b. On or about 17 January 1966 a coordinating conference will be held between the above-mentioned Life Sciences requirements and problem areas will be discussed and evaluated in detail. The product of this coordination exercise will be the initiation of new areas of Life Sciences R.D.T.&E activities, through mutual concurrence, toward quicker and better resolution of the problem areas. Further, it has been agreed that future similar exercises will be scheduled at no greater intervals than once every six months.

28 December 1965

CLASSIFICATION AND DOCUMENTATION
OF LIFE SCIENCES REQUIREMENTS AND PROJECTS.

1. Pertinent material concerning Life Sciences R.D.T.&E activities are contained in the following forms:
 - a. Prime and sub-contractor reports.
 - b. Minutes of 'Suppliers' meetings.
 - c. Consultant's status reports.
 - d. Monthly Senior Flight Surgeon reports.
 - e. Commander's Monthly and Special reports.
2. Classification used for purposes of 28 December 1965 conference has been somewhat arbitrarily chosen, i.e.,
 - a. Biomedical Sciences
 - b. Behavioural Sciences
 - c. Biotechnology and Applications

Consultant used this breakdown in order to provide some facility in matching areas of interest and activity with current projects in the Life Sciences being sponsored by DOD and NASA.

3. [Consultant solicits guidance from] Life Sciences Director and staff on the following points concerning documentation in order to adequately prepare for the next meeting in mid-January 1966:
 - a. Is there any advantage to [Life Sciences staff to have projects extrapolated onto the DD form 1498? If so, they could be used only for internal coordination within the Agency.
 - b. [Life Sciences programs can be aligned to specific systems within some security constraints, if such would provide any advantage to future coordination procedures.

- c. With mutual concurrence on those project areas specified for more detailed review in January, 1966, further agreements should be reached on the type and amount of information desired.
- d. Some reasonable projections into the 1968-70 time period can be made on the basis of current [advanced planning exercises. Therefore, the Consultant's recommendations would be to develop this projection of Life Sciences]requirements for consideration at the time of the next coordination meeting.